trees injured, and various other forms of damage were experenced. Along the middle Atlantic coast the wind velocity reached or exceeded 90 miles per hour.

SNOWFALL.

In Pennsylvania, New Jersey, and the States farther north the snowfall averaged 6 inches or more except in eastern New York, Massachusetts, Rhode Island, and Connecticut, where the average was less than 2 inches and many localities received less than half an inch. South of Pennsylvania the snowfall was generally less than 1 inch. There were no instances of extensive heavy snows occurring this month, though a few stations near the headwaters of the Hudson River reported falls of 6 to 12 inches on the 26th and 27th.

RIVER AND HARBOR CONDITIONS.

The long-continued cold of the preceding month and of the first half of February produced some conditions of unusual interest. Rivers became generally frozen over even in tide-water sections, and press reports tell of extensive oyster beds being frozen over and the oystering industry suffering serious interference in the midst of the busiest part of the season. On the 14th the Hudson River from Tarrytown to Troy was reported to have been converted into an actual highway with from 15 to 18 inches of ice on the deeper parts of the river and much more on the flats. A continuous procession of wagons, carriages, and automobiles could be observed on the river night and day, and there were numerous races between hydroaeroplanes and motor ice-yachts, which rivaled or exceeded express trains in their speed.

The ice in the rivers did not begin to break up until the third decade, but with the occurrence of the spells of mild weather and rains that came after the 20th the ice in many places began to move out, but in most instances it became gorged before drifting far downstream. However, as the rivers were unusually low, only a few instances of damage resulted.

SUNSHINE.

The average number of clear days for the district was 13, which is more than there have been in any month since last October. The percentage of the possible sunshine averaged 64, which is the highest percentage for the district since July, when it was 66. At New York City 235 hours of sunshine were observed, and at Washington, D. C., where the recorded sunshine was the least in the district, the total amount was 154 hours. The average amount of sunshine for the district as determined from the records of 14 stations was 199 hours.

STORM OF FEBRUARY 22, 1912, AT NEW YORK CITY.

By C. D. REED, Local Forecaster.

Gales of unusual violence occurred in the vicinity of New York City on February 21 and 22, 1912. Increasing easterly winds accompanied an unusually rapid fall in the barometer during the afternoon of the 21st. At 8 p. m. the wind shifted to south and at midnight to southwest. A velocity of 44 miles per hour was reached at 7.10 p. m. of the 21st, 60 miles per hour shortly after 11 p. m., and the wind was steadily increasing at midnight.

The maximum velocity for the storm was reached in the five-minute period ending at 1.13 a. m. of the 22d, when an indicated velocity at the rate of 96 miles per hour from the southwest was recorded. In the one-minute period ending at 1.09½, 2 miles of wind were recorded, making the extreme indicated velocity 120 miles per hour. The total wind movement for the 24 hours of the 22d was 1,393 miles, which is an average hourly movement of 58 miles. This is the greatest wind movement ever recorded at the New York office for a 24-hour period. At Long Branch, on the New Jersey coast about 30 miles due south of New York, an indicated velocity of 70 miles per hour from the south was recorded in the five-minute period ending at 12.57 a. m. of the 22d. This occurred on a shift of the wind from south to southwest, and was not preceded nor immediately followed by unusually high velocities, but during daylight hours on the 22d velocities of 50 to 67 miles per hour were frequent at Long Branch. The anemometer at Long Branch is 85 feet above the ground, and the tower on which it is located is a few hundred feet from the beach.

Satisfactory comparison of the high velocities at New York with previously recorded high velocities is wellnigh impossible, because of the many changes that have occurred in the elevation of the anemometer and its surroundings. The highest velocity hitherto recorded is 83 miles per hour, from the west on April 7, 1909, with the anemometer at an elevation of 350 feet above the ground. The present elevation is 454 feet, with three sides (south, west, and north) of the building on which it is located, exposed to an almost unobstructed sweep of the wind.

A discussion of the influences that have been brought to bear on the anemometer records prior to 1910 at New York will be found in the Monthly Weather Review, 1910, pages 1471 to 1476. On page 1473 is a table embodying the results of an investigation as to the reduction that was effected in the recorded wind velocities due to interference from high buildings erected in the vicinity of the old location at the American Surety Building. From this table, if we assume that the velocity of April 7, 1909, should be increased by say 20 per cent to make it what it would have been without the interference of the surrounding and overtowering "sky scrapers," then the velocity on April 7 would have been approximately 100 miles per hour for a five-minute period at that exposure. Then again, taking into consideration that the present height of the anemometer is 104 feet greater than at the old location and that there are no obstructions to the full sweep of the wind from the southwest, it would seem probable that the maximum force of the storm of February 22, 1912, was relatively less than that of the storm of April 7, 1909, by a considerable amount.

The damage to coastwise vessels was apparently greatest from New York south to the Virginia coast. In this section 10 or more vessels of varying tonnage were reported wrecked. In New York Harbor, North River, East River, and Long Island Sound many barges, scows, and small craft were sunk, overturned, or damaged. One barge, laden with 300 bales of linens, and a lighter, with 10 carloads of agricultural implements, sunk. That no greater damage occurred in the immediate vicinity of New York is probably due in a measure to the precautions taken upon the advice and warnings of the Weather Bureau. The first warnings for this storm were displayed as early as 10 p. m. of February 20.

That high wind pressures have been well provided for by the architects who have planned the tall buildings of New York is shown by the absence of noticeable damage to buildings of this class. While the wind does not affect them sufficiently to be detected by the ordinary human senses, it does sway them enough in the higher stories to stop pendulum clocks when velocities of 40 or more miles per hour are maintained for a half hour or more. The largest damage was to signs and plate-glass windows. A few cornices were torn off.